COUNTY COMMISSIONERS OF CHARLES COUNTY, MARYLAND

2005 Legislative Session
Legislative Day # 15

BILL NO. 2005-20

Introduced by Charles County Commissioners

An Act Concerning

CHARLES COUNTY CROSS CONNECTION CONTROL PROGRAM

Date introduced: 8 / 29 / 05

Public Hearing: 9 / 20 / 05

Commissioners Action: ___ /___ /___ _____

Commissioner Votes: WC:____, RF:____, CK:____, EP:____, AS:____

Pass/Fail: _____

Effective Date: ___ /___ /___

Remarks: _____
_____
_____
_____

NOTE: CAPITALS indicate matter added to existing text.
[Brackets] indicate matter deleted from existing law.

COUNTY COMMISSIONERS OF CHARLES COUNTY, MARYLAND

2005 Legislative Session

Bill No. _____

Chapter. No. _____

Introduced by _____

Date of Introduction _____

BILL

AN ACT concerning

Charles County Water and Sewer Ordinance - Cross Connection Control Program

FOR the purpose of

AMENDING CHARLES COUNTY GOVERNMENT'S WATER AND SEWER ORDINANCE BY ENACTING A CROSS CONNECTION CONTROL PROGRAM TO PROTECT THE WATER DISTRIBUTION SYSTEM FROM POTENTIAL CONTAMINANTS.

BY adding to:

THE CHARLES COUNTY WATER AND SEWER ORDINANCE

SECTION 1. BE IT ENACTED BY THE COUNTY COMMISSIONERS OF CHARLES COUNTY, MARYLAND, that the Laws of Charles County, Maryland read as follows:

1.0 - Applicability:

1.1 This ordinance applies only to piping and appurtenances connected to water systems that are owned, operated, or maintained by Charles County Government.

2.0 - Reference Statement:

2.1 COMAR 09.20.01.02 changed the National Standard Plumbing Code details and requirements to include isolation as well as containment assemblies (National Standard Plumbing Code Subsection 10.4.3 Cross Connection Control).

3.0 - Basic Principles:

3.1 This ordinance pertains to "containment" devices not withstanding the isolation devices. Containment devices shall be equal to the highest hazard on the premises.

3.2 No connection to county water shall be subject to backflow or backsiphonage.

3.3 The property owner shall be responsible for all costs associated with the installation, testing, retesting, maintenance and replacement of backflow prevention assemblies as well as any permitting and disconnect/reconnection fees.

3.4 Backflow prevention assembly testers must hold a current state approved Cross Connection Backflow Prevention Training course certification as well as a Master Plumbing License. Journeymen with backflow certification may test under the direct supervision of a licensed Master Plumber.

3.5 Containment devices shall equal the highest hazard on the premises not withstanding the isolation devices.

4.0 - Objectives of Ordinance

4.1 The objectives of the Cross Connection Control Ordinance for the County are:

4.1.1 To protect the potable water supply of the County, by requiring the use of appropriate backflow protection methods. This is to be accomplished by, containing and isolating within the owner's private water system those contaminants or pollutants that could, under adverse conditions, backflow or backsiphon through uncontrolled cross connections into the public water system;

4.1.2 To identify and eliminate or control existing and future cross connections, actual or potential, direct or indirect, between the owner's private potable water system(s) and non-potable water system(s), plumbing fixtures and industrial piping systems; and

4.1.3 To provide for the administration and maintenance of a continuing program of cross connection control that will minimize the possibility for the contamination of the potable water systems by cross connection.

4.2 The County will begin surveys and inspections of premises to determine the nature of existing or potential hazards. Following the approval and adoption of this ordinance by the County Commissioners. The initial focus will be on high hazard industries and commercial premises.

5.0 – Definitions

5.1 **Accessible:** The term "accessible" shall mean having access to, but in some cases may require the removal of a panel door or similar covering of the item described.

5.2 **Accessible, Readily:** The term "readily accessible" shall mean having access without the need of removing any panel, door or similar covering of the item described.

5.3 **Air Gap Separation:** The term "air-gap separation" shall mean a physical separation between the free-flowing discharge end of a potable water supply pipeline and an open or non-pressure receiving vessel. An "approved air-gap separation" shall be at least double the diameter of the supply pipe measured vertically above the overflow rim of the vessel but, not less than 1 inch (2.54 cm). If there are sidewalls, splash shields or other obstructions to the admission of free atmosphere to the air gap within a horizontal distance of two times the diameter or one inch, the air gap must be increased to three times the inlet diameter. If there are two intersecting walls within a horizontal distance of two times the diameter or one inch, the air gap shall be increased to four times the inlet diameter.

5.4 **ANSI:** American National Standards Institute, Washington, D.C.

5.5 **Approved:**

A: The term "approved" as herein used in reference to a water supply shall mean a water supply that has been approved by Maryland Department of the Environment, and the Environmental Protection Agency.

B: The term "approved" as herein used in reference to air-gap separation, a double check valve assembly, a reduced pressure principle backflow prevention assembly or other backflow prevention assemblies or methods shall mean as approved by the County.

5.6 **Approved Assembly:** In reference to backflow prevention assemblies or methods, those assemblies or methods which have been accepted by ASSE, USC Foundation for Cross Connection Control and Hydraulics Research, and Charles County as an effective measure or method to prevent backflow.

5.7 **ASSE:** American Society of Sanitary Engineers, Westlake, Ohio

5.8 **AWWA:** American Water Works Association, Denver, Colorado

5.9 **Backflow:** The term "backflow" shall mean the undesirable reversal of flow of water or mixtures of water and other liquids, gases, or other substances into the distribution pipes of the potable supply of water from any source or sources.

5.10 **Backflow Prevention Assembly:** The term "approved backflow prevention assembly" shall mean an assembly that has been investigated and approved by the County. The approval of backflow prevention assemblies by the County should be on the basis of favorable laboratory and field evaluation report by and "approved testing laboratory" recommending such approval. County requirements include approval from ASSE, USC Foundation for Cross Connection Control and Hydraulics Research and Charles County.

5.11 **Backpressure:** Shall mean any elevation of pressure in the downstream piping system (by pump, elevation of piping, or steam and/or gas pressure) above the supply pressure at the point of consideration which would cause, or tend to cause, a reversal of the normal direction of flow through the backflow prevention assembly.

5.12 **Backsiphonage:** Shall mean a form of backflow due to a reduction in water system pressure that causes a negative or subatmospheric pressure to exist at a site in the water system.

5.13 **Certified Tester:** An individual person who has proven his/her competency to test backflow prevention assemblies of all types, and to prepare reports on such assemblies, as evidenced by the successful completion of the Backflow Assembly Tester Mechanic Certification provided by The Maryland Plumbing-Heating-Cooling Contractors, Inc. and or approved by the Maryland State Board of Plumbing.

5.14 Charles County Department of Utilities: The purveyor of the water.

5.15 Containment: Shall mean the appropriate type or method of backflow protection at the service connection (water meter), commensurate with the highest degree of hazard within the owner's property or system.

5.16 Contamination: Shall mean an impairment of the quality of the water that creates an actual hazard to the public health through poisoning or through the spread of disease by sewage, industrial fluids, or waste.

5.17 Cross Connection: A "Cross Connection" shall mean any actual or potential unprotected connection or structural arrangement between a public or an owner's potable water system and any other source or system through which it is possible to introduce into any part of the potable system any used water, industrial fluid, gas, or substance other than the intended potable water which the system is supplied. By-pass arrangements, jumper connections, removable sections, swivel or change-over assemblies and other temporary or permanent assemblies through which or because of which "backflow" can or may occur are considered to be cross connections.

5.18 Cross Connection Control Technician: An employee or agent of Charles County designated by the Commissioners to administer and enforce the provisions of this ordinance.

5.19 Degree of Hazard: The term "degree of hazard" shall mean an actual or potential threat of contamination of a physical or toxic nature to the public potable water system or the owner's potable water system.

5.20 Double Check Valve Assembly: An assembly composed of two (2) single independently-acting approved check valves, including tightly closing shut-off valves located at each end of the assembly, and suitable connections for testing the water tightness of each check valve. Charles County will only accept Double Check Valve

Assemblies identified with an ASSE 1015 mark (ANSI/AWWA C510-97). Such assemblies shall not to be installed within a pit or vault, or below the 100 year flood elevation.

5.21 Double Detector-Check Valve Assembly: An assembly composed of an approved double check valve assembly with a bypass water meter and meter-sized approved double check valve assembly. The meter shall register accurately very low flow rates and shall register all flow rates. Charles County will only accept Double Detector-Check Valve Assemblies identified with an ASSE 1015 mark (ANSI/AWWA C510-97). Such assemblies shall not be installed within a pit or vault, or below the 100 year flood elevation.

5.22 Dual Check Valve: An assembly of two (2) spring loaded, independently operating check valves without tightly closing shut-off valves and test cocks. Generally employed immediately downstream of the water meter to act as a containment assembly. Charles County will only accept dual check valves identified with an ASSE 1024 mark.

5.23 Flood Level: That level from which liquid in plumbing fixtures, appliances tanks, or vats will overflow to the floor, when all drain and overflow openings built into the equipment are obstructed. Flood level shall also be defined as the 100 year flood elevation.

5.24 Grade: The term "grade" shall mean the slope or fall of a line of pipe in reference to a horizontal plane. In drainage, it is usually expressed as the fall in a fraction of an inch-per-foot length of pipe.

5.25 High Hazard: An actual or potential threat of contamination to the public water system or to a private water system to such a degree or intensity that there could be a danger to health.

5.26 Isolation: The term "isolation" shall mean to confine a potential source of contamination to the non-potable system being served; to provide a backflow prevention mechanism to each actual (individual water outlet) or potential cross connection.

5.27 **Imminent Hazard:** An actual threat of contamination that presents a danger to public health or integrity of the potable water system with consequences of serious illness or death.

5.28 **Moderate Hazard:** One that presents foreseeable and significant potential for pollution, or undesirable alterations of the drinking water supply.

5.29 **Owner:** Any person who has legal title to, or license to operate, or inhabits a property upon which a cross connection inspection is to be made or upon which a cross connection is present.

5.30 **Person:** Any individual, partnership, company, public or private corporation, political subdivision or agency of the State Department, an agency or instrumentality of the United States or other legal entity.

5.31 **Permit:** A document issued by the County which allows the installation and use of a backflow prevention assembly.

5.32 **Pollutant:** The presence of any foreign substance (e.g., organic, inorganic, or biological) in water which tends to degrade its quality so as to constitute a non-health hazard or impair the usefulness or quality of the water to a degree which does not create an actual health hazard to the public health but does adversely and unreasonably affect such waters for domestic use.

5.33 **Potable Water:** The term "potable water" shall mean water from any source that has been investigated by the Maryland Department of the Environment and the Environmental Protection Agency , which has been approved for human consumption.

5.34 **Potable Water System:** The term "potable water system" shall mean any publicly or privately owned water system operated as a public utility under a valid health permit to supply water for domestic purposes. This system will include all sources, facilities and appurtenances between the source and the point of delivery, such as valves, pumps,

pipes, conduits, tanks, receptacles, fixtures, equipment, and appurtenances used to produce, convey, treat, or store a potable water for public consumption or use.

5.35 Pressure Vacuum Breaker Assembly: An assembly consisting of an independently operating, internally loaded check valve, and independently operating, loaded air-inlet valve located on the discharge side of the check valve, with shutoff valves attached at each end of the assembly designed to be operated under pressure for prolonged periods of time to prevent backsiphonage. The pressure vacuum breaker may not be subjected to any backpressure. Charles County will only accept Atmospheric Vacuum Breaker Assemblies identified with an ASSE 1020 mark (ANSI/AWWA C512-92). Such assemblies are not to be used within a pit or vault, or below the 100 year flood elevation.

5.36 Private (Owner's) Water System: The term "private or owner's water system" shall mean that portion of the privately owned potable water system lying between the point of delivery and the point of use. This system will include all pipes, conduits, tanks, receptacles, fixtures, equipment and appurtenances used to produce, convey, store or dispense potable water.

5.37 Protected Cross Connection: A water service connection between a public potable water distribution system and a non-potable water distribution system with an approved backflow prevention assembly properly installed and maintained so that it will continuously afford the protection commensurate with the degree of hazard.

5.38 Reduced Pressure Principle Assembly: An assembly containing with its structure a minimum of two (2) independently acting, approved check valves, together with an automatically operating pressure differential relief valve located between the check valves. The first check valve reduces the supply pressure a predetermined amount so that during normal flow and at cessation of normal flow, the pressure between the checks shall be less than the supply pressures. In case of leakage of either check valve the differential relief valve, by discharge to the atmosphere, shall operate to maintain pressure between the checks less than the supply pressure. The assembly must include

properly located test cocks and tightly closing shutoff valves at each end of the assembly. Installations of Reduced Pressure Principle assemblies require a drain that is capable of consuming the maximum discharge capacity of the Reduced Pressure Principle assembly. Charles County will only accept Reduced Pressure Principle Assemblies identified with an ASSE 1013 mark (ANSI/AWWA C511-97). Such assemblies shall not be installed within a pit, vault, or below the 100 year flood elevation.

5.39 **Retrofit:** To modify something such as a machine or a building by adding parts or assemblies of types or sizes not originally included.

5.40 **Unprotected Cross Connection:** A water service connection between a public potable water distribution system and a non-potable water distribution system **without** an approved backflow prevention assembly properly installed and maintained so that it will continuously afford the protection commensurate with the degree of hazard.

5.41 **USC Foundation for Cross Connection Control and Hydraulic Research Foundation :** University of Southern California Foundation for Cross Connection Control and Hydraulic Research Foundation, Los Angeles, CA .

6.0 – Elimination of Cross Connections

6.1 No private water system may be connected in any manner to the public water system unless the requirements of this ordinance and other applicable laws have been satisfied. The water may not be turned on, and the water may not remain turned on to any premise where identified or unprotected cross connections exist.

7.0 – Responsibility of the County

7.1 The County shall be responsible for the protection of the public potable water distribution system from contamination or pollution due to the backflow or backsiphonage of contaminants or pollutants up to the water service connection.

7.2 If, in the judgement of the County, an approved backflow assembly is required at the County's water service connection to any owner's premises, the County, or its delegated agent, shall give notice in writing to said owner(s) to install an approved backflow prevention assembly at each service connection to said premises. The owner shall, within 30 days, install such approved assembly or assemblies.

7.3 Failure, refusal, or inability on the part of the owner to install said assembly or assemblies within the designated period of time, shall constitute grounds for discontinuing water service to the premises until such assembly or assemblies have been properly installed.

7.4 The County will operate a Cross Connection Control Program, to include keeping of necessary records, which fulfills the requirements of the Maryland Department of the Environment Cross Connection Regulations. (COMAR 26.04.01.32)

7.5 The County shall keep on file, a list of private contractors who are Certified Backflow Assembly Testers.

8.0 – Responsibility of Owner

8.1 The owner shall be responsible for maintaining all necessary records on backflow prevention assemblies installed on their premises.

8.2 The owner shall be responsible for the elimination of, or protection against, cross connections on his/her premises.

8.3 The owner shall maintain any backflow prevention assembly within his/her property in good operating condition. The owner shall immediately correct any malfunction of the backflow preventer which was revealed by periodic testing or observation.

8.4 The owner shall be responsible for overhauling the assembly or assemblies every five (5) years or in accordance with the manufacturer's recommendations.

8.5 The owner shall notify the Cross Connection Control Technician if there is or may be reason to believe that backflow has or may have occurred from a private water system to the public water system as soon as the situation is identified.

8.6 The owner shall notify the County Cross Connection Control Technician in writing of any backflow prevention assembly that has been taken out of service.

8.7 The owner shall be responsible for completing all permit applications and Cross Connection Control Questionnaires to obtain a permit for installation. Only testable assemblies require a permit.

8.8 The owner shall immediately notify the County when the nature of the use of property changes so as to change the hazard classification of the property.

8.9 The owner shall be responsible for forwarding all completed test reports to the Cross Connection Control Technician within 15 days of completion of testing.

9.0 - Responsibility of Tester

9.1 Testers must have knowledge and understanding of the National Standard Plumbing Code and the County's Water and Sewer Ordinance.

9.2 Testers must understand and strictly adhere to testing procedures for all USC certified assemblies accepted by the County.

9.3 The tester shall conduct testing upon assurance that all safety procedures have been observed and that all personnel involved have been appropriately notified.

9.4 The tester's certification shall be kept current by completing recertification on or before the date the current certification expires. Any lapses in certification or discontinuance of certification shall be reported to the Cross Connection Control Technician.

9.5 Any work completed by the tester to achieve satisfactory test results for the customer shall be documented on County issued test forms.

9.6 Reconstruction or overhaul of backflow prevention assemblies must be done using only manufacturer recommended parts for a particular application.

9.7 No tester shall be allowed to substitute any manufacturer's product for the use in another manufacturer's product.

9.8 The tester shall report any nonstandard installations not conforming with the County's Water and Sewer Ordinance. This shall be done in the comments portion of the test form.

9.9 The tester shall provide the customer with accurate and complete test records.

9.10 If an individual tests assemblies within Charles County he/she must register with the Cross Connection Control Technician. The following documentation will be required: proof of license, proof of insurance, and a certificate of completion from a recognized state approved Cross Connection Backflow Prevention Training course.

9.11 If a tester is found to have falsified documentation he/she will be removed from the County's approved list and notification will be sent to the Maryland State Board of Plumbing.

10.0 - Responsibility of Plumbers

10.1 It shall be the responsibility of the Plumber to contact the county's Cross Connection Control Technician with reports of any potential or unprotected cross connections.

11.0 – Right of Entry

11.1 The Cross Connection Control Technician or his authorized agent shall have the right to enter any building, structure or premises at reasonable times to perform any duty imposed upon him/her by this ordinance. Duties may include but are not limited to: disconnection of service, verification that a sufficient backflow prevention assembly has been installed, sampling, testing of water, or inspections and observations of all piping systems connected to the public water supply. Prior notice will be given unless an imminent hazard has been reported. Refusal to allow entry for these purposes shall constitute grounds for immediate termination of the water service.

11.2 At the request of the County, the owner shall furnish any pertinent information regarding the piping system and any chemical storage and handling on such property where cross connections are deemed possible.

12.0 – Imminent Hazards

12.1 If the County determines that an owner's private water system constitutes an imminent hazard, such owner shall install a backflow prevention assembly as may be specified by the County within ten (10) days after notice of the cross connection determination.

12.2 If the owner fails to take corrective measures in a timely manner or refuses to install the specified assembly, water service to the owner's private water system shall be terminated.

12.3 If the County is unable to give notice to such owner or his representative within five (5) business days after the determination that an imminent hazard exists despite efforts to provide such notice the County may terminate water service to the private water system until the specified corrected measures are taken. Upon receipt of a report from a certified tester that corrections have been made and the assembly has passed all testing procedures, water service may be restored.

13.0 – High Hazard Facilities

13.1 All high hazard facilities shall have an approved Reduced Pressure Principle Assembly (ASSE 1013) as a minimum containment assembly.

13.2 High hazard facilities include, but are not limited to:

13.2.1 a building with five or more stories above ground level;

13.2.2 any private water system that contains water which has been or is being re-circulated;

13.2.3 any private water system with a booster pump;

13.2.4 battery manufacturers;

13.2.5 boiler and heat exchangers;

13.2.6 bottling plant;

13.2.7 booster pump facilities with chemical additives;

13.2.8 breweries;

13.2.9 cannery;

13.2.10 car wash with recycling system;

13.2.11 chemical plant;

13.2.12 commercial laundry;

13.2.13 dairies;

13.2.14 dental office;

13.2.15 dry cleaner;

13.2.16 dye works;

13.2.17 exterminators;

13.2.18 fertilizer plant;

13.2.19 film laboratory;

13.2.20 fire sprinkler or standpipe system with chemical additives or with siamese connection

13.2.21 hospital or clinic;

13.2.22 hydropneumatic tanks;

13.2.23 irrigation system with chemical additives;

13.2.24 laboratory;

13.2.25 lawn care companies;

13.2.26 medical building;

13.2.27 metal processing plant;

13.2.28 mortuary; or funeral home

13.2.29 nursing home;

13.2.30 pharmaceutical plant;

13.2.31 power plant;

13.2.32 recycling facilities;

13.2.33 restaurant;

13.2.34 sewage treatment plant, or pumping station

13.2.35 swimming pool;

13.2.36 tire manufacturer;

13.2.37 veterinary hospital or clinic;

13.3 If an authorized agent of the County does not have sufficient access to every portion of a private water system to permit the complete evaluation of the degree of hazard associated with such private water system, an approved Reduced Pressure Principle Assembly shall be installed.

14.0 - Moderate Hazard Facilities

14.1 Moderate hazard facilities include, but are not limited to:

14.1.1 fire sprinkler systems without siamese connections or chemicals;

14.1.2 connections to tanks; or vessels that handle nontoxic substances;

14.1.3 irrigation systems without chemical injection or booster pumps and not subject to innendation;

14.1.4 all industrial and most commercial facilities not identified as high hazard facilities.

14.2 The Department of Utilities may approve a Double Check Valve assembly as a minimum containment assembly for moderate hazards.

15.0 - Notices

15.1 General Notice - Letter mailed to existing accounts with no known backflow prevention assembly installed.

15.2 Internal Inspection - Letter mailed to existing accounts that the County has conducted an internal inspection to determine the type of backflow prevention assembly to be installed.

15.3 Annual Test - Letter mailed to existing accounts with a backflow prevention assembly installed and with requirement to perform a yearly backflow prevention assembly test.

15.4 Repair Notice - Letter mailed to owner whose backflow prevention assembly failed its annual test, or has been installed incorrectly.

16.0 – Permits

16.1 Permits required for each backflow prevention assembly are obtained from the Planning and Growth Management Department, Permits Administration Division.

16.2 Anyone wanting to obtain a backflow prevention assembly permit must submit a permit application and a completed Cross Connection Control Questionnaire.

16.3 Backflow prevention assembly permits shall be issued for a specified time period, not to exceed twelve months from the effective date of the permit. Each permit will indicate a specific date upon which it will expire.

16.4 Permits are subject to revocation and shall be immediately revoked if the owner should change the degree of hazard associated with the service, or if a change of ownership or use should occur.

16.5 The county may modify a backflow prevention assembly permit for a good cause, including, but not limited to, the following:

16.5.1 To incorporate any new or revised Federal, State, or Local Cross Connection Control standards or requirements;

16.5.2 To address significant alterations or additions to the owner's operation, process, or character since the time of backflow prevention assembly permit issuance;

16.5.3 To correct typographical or other errors on the backflow prevention assembly permit;

16.6 Permits are nontransferable. New owners must complete a permit application as well as a Cross Connection Control Questionnaire.

16.7 The county may revoke a backflow prevention assembly permit for a good cause, including, but not limited to, the following reasons:

16.7.1 Failure to notify the County of a change in the degree of hazard located on the premise;

16.7.2 Misrepresentation or failure to fully disclose all relevant facts in the backflow prevention assembly permit application;

16.7.3 Falsifying backflow prevention assembly test reports;

16.7.4 Tampering with backflow prevention assembly;

16.7.5 Refusing to allow the County access within a specified time period to the facility and records.

16.7.6 Failure to have the assembly tested or maintained

16.7.7 Failure to have the proper device installed commensurate with the highest degree of hazard on the premises.

16.8 Backflow prevention assembly permits shall be void upon cessation of operations or transfer of business ownership. All backflow prevention assembly permits issued to a particular user are void upon the issuance of subsequent permits.

17.0 - Existing In-Use Backflow Prevention Assemblies

17.1 Any existing backflow prevention assembly in service at the effective date of this ordinance, shall be allowed by the County to continue in service, subject to Sections 16 (Permits) & 18 (Installation, Testing and Maintenance of Backflow Prevention Assemblies), when installed according to the Plumbing Code, the Water and Sewer Detail Manual, the Water and Sewer Ordinance and when proper maintenance records are produced, unless in the judgement of the County the degree of hazard is such as to supersede the effectiveness of the present backflow prevention assembly, or which may, in the judgement of the County, result in an unreasonable risk to the public health or public water supply.

17.2 Where the degree of hazard has increased, as in the case of a residential installation converting to a business establishment, any existing backflow prevention assembly must be commensurate with the degree of hazard.

17.3 Assemblies that were installed and maintained before the adoption of this ordinance shall remain in service until it is to be tested, repaired or replaced in accordance with this ordinance. The owner shall produce test reports documenting that the assembly has been maintained in accordance with this ordinance.

17.4 The county will not accept any backflow prevention assembly installed in a pit, vault, or similar potentially submerged location. Any existing backflow prevention assembly currently installed in accordance with this ordinance. (National Standard Plumbing Code 10.5.5 - a. Installation of Backflow Preventers)

18.0 – Installation, Testing and Maintenance of Backflow Prevention Assemblies

18.1 All backflow prevention assemblies shall be installed in accordance with the accepted procedures of manufacturers, USC Foundation for Cross Connection Control and

Hydraulic Research, the Department of Utilities, ANSI/AWWA Standards (ANSI/AWWA C510-97 - C512-92), and the National Standard Plumbing Code (10.5.5 - a. Installation of Backflow Preventers)

18.2 All backflow prevention assemblies shall be installed on the owner's side and immediately adjacent to the water meter. There shall be no branches in the service line ahead of the backflow prevention assembly.

18.3 Any backflow prevention assembly, that is not approved by ASSE, USC Foundation for Cross Connection Control and Hydraulics Research, and the County, shall be replaced with an approved backflow prevention assembly in a timely manner, not to exceed thirty (30) days.

18.4 All backflow prevention assemblies required by this ordinance shall be installed in accordance with USC Foundation for Cross Connection Control and Hydraulic Research, the Department of Utilities, ANSI/AWWA Standards (ANSI/AWWA C510-97 - C512-92), and the National Standard Plumbing Code (10.5.5 - a. Installation of Backflow Preventers) and maintained on the owner's premises as part of the owner's water system.

18.5 Ownership, testing, and maintenance of backflow prevention assemblies are the responsibility of the owner. Each assembly required in this ordinance shall be properly maintained and functioning properly at all times.

18.6 Backflow prevention assembly tests shall be conducted upon initial installation and at least annually thereafter with a record of all testing and repairs retained by the owner. Backflow assemblies may be required to be tested more frequently depending upon the degree of hazard or as requested by the Department of Utilities.

18.7 Each backflow prevention assembly required under this ordinance shall be accessible to County representatives at reasonable times.

18.8 The County shall not accept an unprotected bypass around a backflow prevention assembly. Any existing or proposed by-pass shall be permanently removed or protected in accordance with this ordinance.

18.9 Where a continuous water supply is critical and cannot be interrupted for the periodic testing of a backflow prevention assembly, multiple backflow prevention assemblies or other means of maintaining a continuous supply shall be provided. Such other means shall not create a potential cross connection.

18.10 When repairs to backflow prevention assemblies are deemed necessary, whether through annual testing or routine inspection by the owner or by the County, these repairs shall be completed within a time specified in accordance with the degree of hazard. Repairs on a private water system considered to be an imminent hazard shall be completed within ten (10) days, a high hazard shall be completed within ten (10) days, and all other repairs within thirty (30) days.

18.11 Upon a determination that a backflow prevention assembly is required to be installed on an owner's private water system, the owner will be notified in writing of the required type of backflow prevention assembly. The owner will have the following time periods within which to install the specified backflow prevention assembly:

	Imminent	**High**	**Moderate**
Air-gap Separation	10 days	10 days	30 days
Reduced Pressure Principle Assembly	10 days	10 days	30 days
Double Check Valve Assembly	10 days	10 days	30 days

Double Detector Check Valve Assembly	10 days	10 days	30 days
Dual Check Valve Assembly	10 days	10 days	30 days
Pressure Vacuum Breaker Assembly	10 days	10 days	30 days

18.12 The County may require the installation of the required backflow prevention assembly immediately or within a shorter time period than specified above if, in the judgement of the County, it is determined that any condition poses a critical threat of contamination to the public water supply system.

18.13 All assemblies required for new construction shall be installed prior to occupancy. All new construction plans and specifications shall be made available to the County for approval and to determine the degree of hazard.

18.14 Charles County will accept only the following USC certified backflow prevention assemblies for installation and use:

18.14.1	Atmospheric Vacuum Breaker	ASSE Standard 1001
18.14.1	Hose Connection Vacuum Breaker	ASSE Standard 1011
18.14.1	Reduced Pressure Principal Assembly	ASSE Standard 1013
18.14.2	Double Check Valve Assembly	ASSE Standard 1015
18.14.3	Double Detector Check Valve Assembly	ASSE Standard 1015
18.14.4	Pressure Vacuum Breaker Assembly	ASSE Standard 1020
18.14.5	Dual Check Valve Assembly	ASSE Standard 1024
18.14.5	Vacuum Breaker - Backsiphonage	ASSE Standard 1056

18.15 All newly constructed residential homes with moderate hazards shall be required to install a Dual Check assembly on the owner's side and immediately adjacent to the water meter. Residential water systems containing higher hazards shall be required to install a Reduced Pressure Principal Assembly.

18.16 For premises existing prior to the effective date of this program the Department of Utilities will perform evaluations and inspections to inform the owner by letter of any corrective action deemed necessary, the method of achieving the correction, and the time allowed for the correction to be made, not to exceed 90 days. This time period may be shortened depending upon the degree of hazard involved.

18.17 Hose Connection Vacuum Breakers (ASSE 1011) are required for residential or commercial properties and shall be permanently attached to all threaded hose bibs.

18.18 All retrofit installations of Reduced Pressure Principle assemblies and Double Check Valve backflow preventers shall include the installation of strainers located immediately upstream of the backflow assembly. The installation of strainers will help reduce the potential for fouling of backflow assemblies due to circumstances occurring to the water supply system such as water main repairs, water main breaks, fires, periodic cleaning, and flushing of mains and hydrants, etc. These occurrences may "stir up" debris within the water main that could cause fouling of backflow assemblies installed without the benefit of strainers.

18.19 Reduced Pressure Principle Assemblies sized ½" - 2" shall require an air gap basket to be installed in the drain pipe to an area capable of conveying the assemblies maximum discharge. Strainers shall be installed ahead of the incoming shut off valve to prevent fouling of the assembly.

18.20 Reduced Pressure Principle Assemblies sized 3" - 10" do not require strainers if installed on water mains. A drain pipe to an area capable of conveying the assemblies maximum discharge is required.

18.21 Backflow prevention assemblies are required to be tested whenever a change of ownership or use or degree of hazard takes place.

18.22 Air Gaps shall be measured vertically from the lowest end of a potable water outlet to the flood rim or line of the fixture or receptor into which it discharges. The minimum required air gap shall be twice the effective opening of a potable water outlet unless the outlet is a distance less than 3 times the effective opening away from a wall or similar vertical surface in which case the minimum required air gap shall be 3 times the effective opening of the outlet. In no case shall the minimum required air gap be less than 1". (National Standard Plumbing Code 10.5.2- a., b. - Requirements for Air Gaps)

18.23 Double Check Valves and Reduced Pressure Principle valves shall be installed with the bottom of the assembly not less than 12 inches above the floor with the maximum of the top of the assembly 60 inches above the floor or working platform. Testable backflow prevention assemblies having atmospheric vents shall not be installed in pits, vaults, or similar potentially submerged locations. Flooding of the pit can result in cross connection contamination. (National Standard Plumbing Code Figure 10.5.3 Required Backflow Prevention Devices)

18.24 Reduced Pressure Principle Assemblies should be planned where water discharge from the relief port will not be objectionable. An optional air gap drain can be used to positively drain away minor discharges. (National Standard Plumbing Code Figure 10.5.3 Required Backflow Prevention Devices). Charles County will only allow Reduced Pressure Principle Assemblies to be installed in a horizontal position.

18.25 Atmospheric Vacuum Breakers shall be installed with the critical level at least six inches above the flood level rim or highest point of discharge of the fixture being served. Approved deck-mounted and pipe-applied vacuum breakers and vacuum breakers within equipment, machinery and fixtures where the critical level is a specified distance above the source of contamination shall be installed in accordance with manufacturer's instructions with the critical level not less than one inch above the flood level rim. Such assemblies shall be installed on the discharge side of the last control valve to the fixture and no shut-off valve or faucet shall be installed downstream of the vacuum breaker. Vacuum breakers on urinals shall be installed with the critical level six inches above the flood level rim. Atmospheric Vacuum Breakers should not be installed where it will be exposed to continuous pressure for more than 12 out of 24 hours. (National Standard Plumbing Code Figure 10.5.5 Installation of Backflow Preventers)

18.26 Pressure type vacuum breakers shall be installed with the critical level at a height of at least 12 inches above the flood level rim for ASSE 1020 assemblies and with the critical level at least six inches above the flood level rim or highest point of discharge of the fixture being served for ASSE 1056 assemblies. Deck-mounted and pipe-applied pressure type (ASSE 1056) vacuum breakers within equipment machinery and fixtures where the critical level is a specified distance above the source of contamination shall be installed in accordance with manufacture's instructions with the critical level not less than one inches above the flood level rim. (National Standard Plumbing Code Figure 10.5.5 c. Installation of Backflow Preventers)

18.27 If the assembly is located outdoors, an ASSE 1060 enclosure is required to protect the assembly from freezing.

19.0 - Thermal Expansion

19.1 Installation of a backflow prevention assemblies result in a potential for a closed plumbing system within the premisees. As such, provisions may have to be made by the

owner to provide for thermal expansion within their closed loop system, e.g., the installation of thermal expansion assemblies and/or pressure relief valves. Instantaneous water heaters are exempt.

20.0 – Use of Hydrant Meters

20.1 It is the policy of the County that the opening or closing, damaging, tampering, connection to, or withdrawal of water from any publicly owned or privately owned fire hydrant connected to the County water system is expressly prohibited, except in compliance with the terms of this Ordinance. Authorized withdrawal of water from any hydrant defined above is strictly limited to the following persons and purposes:

20.1.1 Fire fighting activities by the personnel of the County and other fire departments who provide fire protection services within a jurisdiction served by county fire hydrants or fire departments that provide mutual aid within any area served by County fire hydrants.

20.1.2 Test operations to establish the rate of the flow of water available from fire hydrants by personnel of the County or their delegated agents. These test operations may include the testing necessary to furnish data needed for fire insurance evaluations or engineering evaluations of the effectiveness of the water system.

20.1.3 Water flushing and collection of water samples by authorized County personnel for improving or determining the quality of water in the county water system, or to minimize the possibilities of impurities remaining in the water system from breaks, leaks, or repairs to the water system.

20.1.4 Water withdrawal from publicly owned fire hydrants by authorized County personnel for cleaning of sanitary or storm sewer lines.

20.1.5 Companies or individuals who provide justification and have received a permit from the County with the use of a County issued hydrant meter and Reduced Pressure Principle backflow prevention assembly purchased and maintained by the company or individual.

20.2 Any person who opens, closes, damages, tampers with, connects to, or withdraws water from a county fire hydrant in a manner that does not fully comply with the provisions of this Ordinance shall be subject to enforcement actions.

20.3 All authorized hydrant users are required to use a Reduced Pressure Principle backflow prevention assembly when connecting to a hydrant that is supplied by the County water distribution system. To prevent damage to the fire hydrant, the Reduced Pressure Principle backflow prevention assembly shall be supported either where the meter joins the backflow prevention assembly or where the Reduced Pressure Principle backflow prevention assembly and the gate valve meet. The user will maintain a clearance of at least 12" from the bottom of the relief zone to the ground at all times.

20.4 If a user is identified as connecting to the County's water distribution system without a Reduced Pressure Principle backflow prevention assembly, the permit is considered void and all deposits will be forfeited. An immediate suspension of privileges is established and closure of any account issued to the person in violation of this ordinance will take place followed by the demand for the return the County's hydrant meter immediately.

20.5 Denial of a future application for an account to use a hydrant meter within the County may also be imposed upon anyone connecting to a hydrant supplied by the County's

water distribution system without using a certified backflow prevention assembly or without a permit.

20.6 To eliminate cross contamination, all permitted users are required to use an (ASSE 1013) Reduced Pressure Principle backflow prevention assembly at the meter. No exceptions will be made. The assembly will include a threaded connection to a county fire hydrant, a county issued water meter, a Reduced Pressure Principle backflow preventer (purchased and maintained by the company or individual) with a support, and a gate valve. Ownership of the water meter will be retained at all times by the County.

20.7 Reduced Pressure Principle backflow preventers used for backflow protection on hydrant meters shall to be tested annually, or more frequently when required.

20.8 County issued hydrant meters and company or individually owned Reduced Pressure Principle backflow prevention assemblies will be clearly marked to provide identification of approved users. The County will retain the right to change the identification marks as they see fit.

21.0 – Lawn Irrigation Systems or Lawn Sprinklers

21.1 Where systems include a chemical injector or any provisions for chemical injection, the potable water supply shall be protected by a Reduced Pressure Principle Assembly. If the assembly is not within a heated area the assembly must be enclosed within a certified ASSE 1060 enclosure to prevent freezing.

21.2 Lawn irrigation systems without a chemical feed must have a Reduced Pressure Principle Assembly installed within an enclosure meeting ASSE 1060 standards. If the assembly is

not within a heated area the assembly must be enclosed within a certified ASSE 1060 enclosure to prevent freezing.

21.3 A permit is required for this installation and may only be installed by a state registered Master Plumber.

22.0 – Fire Sprinkler Systems

22.1 All unmetered fire sprinkler systems without booster facilities, siamese connections or chemical additives shall have a Double Check Valve Assembly as a minimum containment assembly. The Department of Utilities may require a Double Detector check valve assembly at their discretion.

22.2 All fire sprinkler systems with a booster facility, chemical additive, or siamese connections must have a Reduced Pressure Principle Assembly as a minimum containment assembly.

22.3 In the event that chemicals are added, or found to have been added, to a fire sprinkler system after installation of a backflow preventer the unit shall be replaced by a Reduced Pressure Principle Assembly (ASSE 1013). Failure to comply will result in notification to the Health Department, and Fire Marshall as well as termination of water service until the assembly has been replaced and inspected. If in this situation the customer requests to continue the use of the existing assembly, flushing, washing and testing of the piping or the replacement of piping will be required.

22.4 A permit is required for this installation of backflow prevention assemblies and may only be installed by a state registered Master Plumber or a Journeyman with backflow credentials working directly under a licensed Master Plumber.

23.0 – Swimming Pools, Hot Tubs, Spas

23.1 Any commercial swimming pool, hot tub, or spa with or without a chemical booster pump directly connected to the County water system shall have a certified (ASSE 1013) Reduced Pressure Principle Assembly installed. If the Reduced Pressure Principle Assembly is outside it shall be confined within a certified ASSE 1060 enclosure to protect from freezing and allowing room to test and maintain the assembly.

23.2 Residential applications for swimming pools, hot tubs, or spas with or without chemical booster pumps shall be protected by an approved backflow prevention assembly recommended by the Department of Utilities.

24.0 – Unapproved Source of Supply

24.1 No person shall connect, or cause, or allow to be connected to the public water supply system, any supply of water not approved by the County.

24.2 Where a connection to a County water line is made, and the property owner continues to have a well or other source of water, it shall be unlawful for the plumbing servicing any building upon such property to be so connected that any water within the building may be served with water from any source other than the county connection. A Reduced Pressure Principle Assembly shall be required and it shall be installed, at the property line within an ASSE 1060 enclosure, protecting the device from freezing.

25.0 – Violations

25.1 A written notice of violation shall be given to any person who is determined to be in violation of any provision of this ordinance.

25.2 Such notice shall set forth the violation and the time period within which the violation must be corrected. The violation must be corrected within a reasonable time, as specified in the notice, not to exceed thirty (30) days from issuance of the violation. If in the judgement of the County the violation is occurring on a owner's private water system and that such violation has created or contributed to the existence of an imminent hazard, the owner will be required to correct the violation within a period of time specified by the Department of Utilities.

25.3 Water service may be terminated to a premise if the owner fails to correct a violation. Termination of water service will be without prejudice to the County's ability to, impose any other remedy available to the County against the owner or any other person responsible for the violation.

25.4 Failure by the owner, to have backflow prevention assemblies tested and repaired as required will result in disconnection of water service.

25.5 Any person found in violation of any provision of this ordinance shall pay to the County all expenses incurred by the County in repairing damages to the public water system caused in whole or in part by such violation, and expenses incurred by the County in investigating and correcting such violation.

SECTION 2. BE IT FURTHER ENACTED, that this Act shall take effect [FORTY-FIVE (45)] calendar days after it becomes law.